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VOLUME XLIX, 1938

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K. V. Krombein

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JANUARY, 1938

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Stated Meetings of The American Entomological Society will be held at 8.00 P. M., in 1938, on the fourth Thursday of each month excepting June, July, August, November and December, and on the third Thursday of November and December.

Communications on observations made in the course of your studies are solicited; also exhibits of any specimens you consider of interest.

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ENTOMOLOGICAL NEWS

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Further Observations on the Nesting Habits of Cerceris nigrescens Smith (Hymenoptera: Sphecidae).

By KARL V. KROMBEIN, Buffalo, N. Y.

The following notes on *Cerceris nigrescens* Smith, made in September 1936 in Forest Lawn Cemetery, Buffalo are a continuation of my observations of this species during 1934.[1] Mr. Henry Dietrich of Cornell University has been kind enough to determine the weevils.

Cerceris no. 2. Entrance of burrow open and surrounded by a mound of pellets of earth about three-eights of an inch in height and an inch and one half in diameter. Burrow ran down at an angle of 85° from the horizontal to the one and one half inch level and then at an angle of 45° to the three inch level. The burrow ended at this depth and contained no weevils.

Cerceris no. 3. Entrance of burrow open and surrounded by a cone of pellets three sixteenths of an inch high and one inch in diameter. Burrow descended for one inch vertically and opened into a cell three quarters of an inch long at an angle of 45°. The cell contained three *Sitona hispidula* Fabr., the clover-root curculio, and the wasp continued to bring in more weevils after I excavated the burrow.

Cerceris no. 4. Entrance of burrow plugged with earth for an eighth of an inch from the surface and without a cone of pellets. The burrow (including the cell) extended to a depth of an inch and one half at an angle of 85° from the horizontal and contained two *Sitona hispidula.*

Cerceris no. 5. Entrance open and not surrounded by a mound of pellets. Burrow descended for half an inch at an angle of 85° from the horizontal, then at an angle of 45° for

[1] Krombein, Karl V. Biological Notes on Some Solitary Wasps. (Hymenoptera: Sphecidae). Ent. News XLVII: 93-99, 1936.

three-quarters of an inch and then back at a right angle for another inch. Two cells ending at the three inch level, at a 45° angle to the horizontal and at right angles to each other were connected with the main burrow by short passages. One cell was completely stocked and held twenty-five *Gymnetron antirrhini* Payk. and a tiny wasp larva while the other cell contained two weevils of the same species.

Cerceris no. 6. Wasp captured while flying with a *Gymnetron* species (?).

Cerceris no. 7. Wasp captured while flying with a *Sitona hispidula*.

Cerecris no.'s 8-10. Burrow entrances open and two of them surrounded by a cone of pellets. General form of burrow as in no. 3 but no weevils were found in any of the nests.

The shape of the burrow appears to be quite constant and is the same as that figured by the Peckhams[2] for *Cerceris nigrescens*. The only exception was the *Cerceris* no. 5 where the burrow had one extra angulation. The cone of earth around the entrance to the burrow is lacking as often as it is present. There is no correlation here with the species of prey stocked since burrows 4 and 5 lacked a cone but contained different weevils. Certainly those burrows having the cone resemble the entrance to an ant's nest very much. Probably this is not the effect of a studied mimicry on the wasp's part but rather an indication that some of the *Cerceris* are a bit lazier.

Ordinarily the entrance to the burrow is not closed while the wasp is absent but one burrow (no. 4) had an earthen plug at the entrance. It is certainly a lack of foresight on *Cerceris* part leave the entrance open since she is much troubled by *Senotainia trilineata* V. d. W., the Miltogrammine inquiline, which follows her around and is apparently the cause of the wasp's wariness in entering her burrow. I have seen *Senotainia*, tired of shadowing a *Cerceris*, give up the chase and wait for the wasp at her burrow. As soon as the wasp reappeared the fly again took up the chase.

[2] Peckham, G. W. and E. G. On the Instincts and Habits of the Solitary Wasps. Wisconsin Geol. and Nat. Hist. Surv. Bull. 2: Pl. VIII, Fig. 6, 1898.

The weevil is carried well toward the wasp's head during flight. The Peckhams state that the prey is held in the mandibles but I have never been able to get close enough to a flying wasp to verify this. The weevil is held by the mandibles alone when the wasp is on the ground.

I have recorded four species of weevils—*Sitona hispidula, Gymnetron antirrhini, Gymnetron* species and *Hyperodes delumbis* as prey of *nigrescens* but apparently an individual wasp uses only one of these species in all her provisioning. Mr. John G. Franclemont has taken one of these wasps at Chafee, New York (September 13, 1935) carrying a *Sitona hispidula.* In all probability *nigrescens* stocks her nests with this clover-root curculio over a large portion of its range and must be an important secondary factor in the control of the beetle since at least a dozen weevils would be necessary to bring one wasp larva to maturity.

In my previous paper I indicated that *nigrescens* is a colonial species. This contention was borne out by my observations this year. After two years the wasps were still nesting in the identical area and the population had not increased appreciably. A spirit of toleration pervades the colony and there is no stealing of prey from the rightful owners such as has been recorded for various species of *Bembix* which also live in communities.

An Annotated List of The Butterflies of Nebraska, with the Description of a New Species. (Lepid.: Rhopalocera).

By R. A. Leussler, Omaha, Nebraska.

As no list of Nebraska butterflies has been published for more than 40 years (H. G. Barber's list in the 1893 Proceedings of the Nebraska Academy of Science) and as many additional species have since been taken in the state, and more definite records are at hand in the case of others, there appears to be ample justification for a list at this time.

The writer has collected butterflies in Nebraska for 28 years, keeping careful field notes during the active season and com-

piling them at the end of each season. Others who have collected in the state during this time and the result of whose collecting has contributed to the data contained herein, are:

Dr. Robt. H. Wolcott, who greatly assisted the writer at all times, and who but for his death in 1934 would have joined in the authorship of this list; Frank H. Marshall, Frank H. Shoemaker, Dr. R. W. Dawson, C. E. Mickel, and L. M. Gates.

Earlier collectors who have added material of their collecting to the collection of the University of Nebraska are: Prof. Lawrence Bruner, Merritt Cary, and J. C. Crawford.

Professor Myron H. Swenk, head of the Department of Entomology, University of Nebraska, generously granted access to the University collection as well as to the library of the department, making possible examination and study of a large number of specimens collected in the state.

The present list includes 159 species. Although this is a rather large number of species to record from one state I feel confident that many more species are to be found in Nebraska, and that when the state has been more fully covered a number of species which have not hitherto been credited to the state will be added to the list.

This rather extensive butterfly fauna is to be accounted for by a variety of causes: 1). Geographical location, being midway between the East and West, and also between the North and South. 2). Extensive area. Nebraska covers some 400 miles east and west, and 200 miles north and south. 3). Range of altitudes, varying from less than 1000 feet along the Missouri river to approximately 5000 feet in Banner county adjacent to the Wyoming line. 4). Diversity in the character of country, there being woodland, prairie, sandhills, plains, pine woodland and rocky canyons. 5). Proximity of the Rocky Mountains, accounting for the presence of mountain forms in the western part, as gaps in mountains permit these forms to find their way through.

Only such species are included in the list as have been collected within the state by the writer or by others where the specimens have actually been examined by him.

The classification followed is that of Barnes & Benjamin's Check List of 1926.

Where not otherwise noted the records refer to captures by the writer.

Hesperia pahaska n. sp.

On the high plains of the canyon region in Sioux County, Nebr., there flies a skipper which has passed under various names but which differs from all the named forms. An examination of the genitalia indicates that it is distinct. I propose for it the name *pahaska,* the name the Sioux Indians bestowed upon Col. Wm. F. Cody (Buffalo Bill), who killed Chief Yellow Hand in single combat in War Bonnet Canyon, upon the rim of which this skipper flies. "Pahaska" in the Sioux language means "White Chief".

Male, upper side: Primaries, a somewhat faded or washed-out-looking fulvous, broad dark border on outer margin not very clearly defined; fulvous apical spots within the border rather pale; stigma curved and fairly heavy, scales beneath stigma shading it and making it appear heavier than it really is. Secondaries, fuscous with a single pale fulvous spot toward base, and an outer curved row of similar pale fulvous spots. Fringes dirty white. Under side: Primaries paler than above, inner margin very pale; apical spots of upper side reproduced, but in color they are a dirty white. Secondaries, ground color an uncertain shade of yellowish brown, the inner margin, however, broadly yellow; the spot in basal area larger than on upper surface, and somewhat bifid; above this, near costa, a linear light spot; outer row of spots consists of 6 irregular shaped spots fairly separate, the one nearest inner margin projecting inwardly. All spots faintly silvered. Expanse 36 mm.

Female, pattern similar to male but fulvous area greatly restricted; apical spots of primaries whitish. Fringes dirty white. Under side similar to that of the male. Expanse 40 mm.

The above is a description of the ♂ holotype and the ♀ allotype, selected from a series of 7 males and 6 females as being representative examples. The entire series is from the canyon region of Sioux County near the town of Harrison, NEBRASKA.

♂ *Holotype* July 15, 1917. ♀ *Allotype* July 19, 1917, both in the collection of the writer. 6 ♂ *paratypes,* June 22, 24,

1911. July 17, 18, 19, 22, 1917. 5 ♀ *paratypes*, June 27, 1911. July 16, 19, 19, 22, 1917.

This species is nearest *viridis* Edw. Compared with that species it is duller, more sordid or washed-out-looking, with the spots paler and consequently more contrasting. The fringes also are lighter, and the male stigma is heavier and shaded beneath, as stated in the description. On the under side the primaries are less reddish than in *viridis*, the secondaries darker, and the spot nearest inner margin projects inwardly, whereas in *viridis* this spot lies nearer the outer margin than the spot next to it.

R. C. Williams, who made a slide of the genitalia in 1923, wrote that while the maculation is like *viridis*, the male genitalia is different from that species, and added: "it seems to me you either have a good species or a valid form to describe."

1. PAPILIO PHILENOR L. Rare. Has been taken at Omaha, Lincoln and Roca. Larvae have been found on Dutchman's pipe vine (*Aristolochia sipho*) in June and in August, and reared to maturity, the butterflies emerging in July, October and in May of the year following pupation.

2. P. AJAX L. (ASTERIUS Cram.). Apparently found over the entire state. Common at Omaha and Lincoln. First brood May and June; second brood from the middle of July to first part of September.

P. AJAX form CURVIFASCIA Skin. A number of overwintering chrysalids, produced by larvae found on parsley at Omaha, gave forth imagoes of this form, while others gave forth imagoes of the typical form.

P. AJAX form AMPLIATA Men. Out of a large number of *ajax* larvae reared at Omaha there was obtained 1 male and 1 female of *ampliata*.

P. AJAX ab. ALUNATA Skin. & Aar. One specimen of this aberration in the Nebraska University collection. Taken in Squaw Canyon, Sioux County, July, 1892.

3. P. BAIRDII Edw. Four specimens in the University collection, all collected in Sioux County. July, 1892, June, 1900; July 29, 1913; August 15, 1913.

P. BAIRDII form BRUCEI Edw. Found in the western part of the state, where it appears to be more common than the typical form. Sioux County July, 1892 (Univ. coll.); Haigler Aug. 19, 1909 (Gable); Colfer Aug. 18, 1912 (Shoemaker); Wauneta, July 27, 1923 (Leussler).

4. P. NITRA Edw. Rare. One male Bull canyon, Wild Cat Mtns., near Harrisburg, Banner County, June 2, 1919 (Leussler).

5. P. INDRA Reak. Rare. One specimen from W. Monroe Canyon, Sioux County, May 31, 1900 (Univ. coll.); 1 from Bull Canyon, Harrisburg, Banner County, June 2, 1919 (Leussler).

6. P. CRESPHONTES Cram. Not uncommon in the eastern part of the state and has been taken as far west as Kearney. First brood latter part of May through June; second brood August and September. Larvae in numbers can be found at Omaha on prickly ash in September.

7. P. GLAUCUS L. Black females are found commonly in the eastern part of the state during May and June, and again during July and August. Observed and collected at Omaha every year.

P. GLAUCUS form TURNUS L. The commonest *Papilio* in the eastern part of the state. First brood early May; second about the middle of July. Some individuals of the early brood closely resemble race *canadensis* R. & J., in having the yellow submarginal spots on under side of primaries united into a band and in being considerably smaller than individuals of the later brood.

8. P. MULTICAUDATA Kirby. Abundant in the western part of the state, especially in Sioux County where it is the common *Papilio*. Specimens of both sexes taken there in the latter part of June were already more or less worn, suggesting that the species makes its appearance in late May or early June. Specimens also collected at Valentine June 9, 1914, and one was taken a few miles south of Omaha May 1, 1910, by Dr. Wolcott. Apparently double brooded as the University collection contains a specimen taken in Sioux County July 20, 1892.

9. P. TROILUS L. A single specimen taken near Omaha April 27, 1913; it had the appearance of having travelled a long distance, as its wings were badly mutilated although the colors were fresh.

10. P. PALAMEDES Dru. Rarely visits Nebraska. One individual observed at Omaha (Leussler); one taken in Dodge County by the late E. A. Dodge and now in the writer's collection. Barber's list credits it also to Lincoln.

11. P. MARCELLUS Cram. form TELAMONIDES F. & F. Rare. One specimen, near Omaha, April 3, 1910.

P. MARCELLUS form aest. LECONTEI R. & J. Rare. Observed occasionally at Omaha during late June and July (Leussler) and at Lincoln (Wolcott). One specimen in University collection bearing Rulo locality label, no date. Rulo is in the extreme southeastern corner of the state, and as papaw, the food plant, is known to occur in that part of the state it is likely that this butterfly is not uncommon thereabouts.

12. PARNASSIUS SMINTHEUS Dbldy & Hew., race SAYII Edw. Common in the northwestern part of the state. Long series have been collected on the ridges and canyon slopes in Sioux County, about 8 miles northwest of the town of Harrison. Much variation in the number and size of red spots is noted. Most of the males have a submarginal row of black crescent-shaped spots on secondaries, heavy and distinct in some, and but faintly indicated in others. In some specimens the red spots are replaced by spots of an orange tint, varying in degree from slight to very pronounced.

13. NEOPHASIA MENAPIA (F. & F.). Found in the canyons of Sioux County, where, on the pine-covered slopes it is reported to be common. I have specimens taken there August 14, 1911 (F. H. Shoemaker) and August 18, 1912 (R. W. Dawson).

14. APPIAS ILAIRE (Godt.) race NEUMOEGENII (Skin.). A single tattered specimen, taken at Omaha, August 19, 1909, following ten days of steady southeast wind; clearly a straggler. It is a male and has the stiff brush-like clusters of hair attached to the abdominal claspers, leaving no doubt as to identification.

15. ASCIA SISYMBRII (Bdv.). Apparently found only in the western part of the state, and not common there. 2 specimens, Sioux County, 1900 (Wolcott).

A. SISYMBRII ab. ♀ FLAVA (Edw.). One specimen of this yellowish female, Monroe Canyon, Sioux County, June 5, 1919 (Leussler).

16. A. PROTODICE (Bdv. & Lec.). Common over the entire state, though less so than *rapae*. In the eastern part of the state it is on the wing from May till October.

A. PROTODICE gen. vern. VERNALIS (Edw.). Less common, but specimens of this form, small in size, lightly marked on upper surface, and with the veins on under side of secondaries heavily fuscous, can be taken at Omaha and Lincoln in late March and April. *Protodice*, taken late in October often shows considerable darkening of veins on under side of secondaries but otherwise is more like the typical form.

17. A. RAPAE (L.). The spring form, the males of which are sometimes almost immaculate, is fairly common in the eastern part of the state, and probably in other parts as well. April and May.

A. RAPAE gen. aest. YREKA (Reak.). Exceedingly common; found everywhere and at all times during the summer and fall.

18. NATHALIS IOLE Bdv. Very plentiful, sometimes actually swarming at Omaha, and apparently just as common all over the state, for I have taken it at many points in every quarter of the state. Two broods at least, first early July, second early September, continuing on the wing until cold weather. In some females the ground color of secondaries is pure yellow while in others it is decidedly orange.

(To be continued)

A List of Dragonflies taken during the Summer of 1936 in Western United States. (Odonata).

BY CARSTEN AHRENS, McKeesport High School, McKeesport, Pennsylvania.

During the summer of 1936, the writer had the good fortune to be selected as a student in the Yosemite National Park

School of Field Natural History which is conducted in California by the Department of the Interior. On the trip west by automobile, collecting was attempted wherever climatic and topographical conditions were favorable. The trip to and from California was hastily made; there was little time allowed for collecting. Most of the insects taken were netted from vicinities close to the highways, or actually captured along the road.

A total of seven weeks was spent in Yosemite National Park where a preliminary check-list of the dragonflies of the area was made. During these weeks, 38 species were collected in Yosemite, and since the dismissal of school, this list and specimens have been accepted by the officials of the museum there. Five species of the dragonflies collected in Utah are new records for the state. They are: *Anax walsinghami* McLachlan, *Brechmorhoga mendax* Hagen, *Hyponeura lugens* Hagen, *Ischnura demorsa* Hagen, *Ischnura damula* Calvert.

I wish to express my appreciation to Mrs. L. K. Gloyd of the University of Michigan Museum, Ann Arbor, Michigan, for her cheerful and expert help in identifying species; to Prof. Frederick M. Gaige who permitted me to make use of the laboratory and specimens of this museum; to Mark Leslie for his skillful assistance in collecting; and to Claudeous Brown with whom I corresponded regarding the specimens collected in Utah. The arrangement of species used by Needham has been followed in this paper.

ANISOPTERA.

1. TANYPTERYX HAGENI Selys. Two males taken along Snow Creek, 7000 feet*, in Y. N. P.** July 21. One female in the same vicinity, August 4. The insects have the same habits which the author noticed in *Tachopteryx thoreyi* Hagen, in Cades Cove, Tenn. The dragonfly will flatten itself against the surface of a rock or tree from which it will make sudden sallies after passing insects, and then return to the favorite perch.

2. PROGOMPHUS BOREALIS McLachlan. 9 males and 1 female collected along a little, rocky stream near Washington,

*The altitude is given when it is considered significant.
**Y. N. P., Yosemite National Park.

Utah, August 14. The insects made short flights, alighting frequently on rocks protruding from the water or upon the sandy margin of the stream.

3. HAGENIUS BREVISTYLUS Selys. 2 males and 1 female, near Lebonon, Missouri, August 21.

4. OPHIOGOMPHUS BISON Selys. A female acquired where Meadowbrook is crossed by the Pohono Trail, Y. N. P. (6000) June 30.

5. ERPETOGOMPHUS DESIGNATUS Hagen. Near Lebanon, Missouri on August 21, a male was captured with a male *Hagenius brevistylus*. The *H. brevistylus* had struck and seized the *designatus* with such force that both were carried into the water. Both were dipped from the river an instant after they struck the surface.

6. F. COMPOSITUS Hagen. Two males on August 13 and 14; one near Glendale, Arizona, the other near Washington, Utah.

7. GOMPHUS EXTERNUS Hagen. One male near Prophetstown, Illinois, June 9.

8. G. AMNICOLA Wash. One male near Prophetstown, Illinois, June 9.

9. G. VASTUS Walsh. One male near Prophetstown, Illinois, June 9.

10. G. GRASILINELLUS Walsh. One male near Prophetstown, Illinois, June 9.

11. DROMOGOMPHUS SPOILIATUS Hagen. A female near Clinton, Oklahoma, August 19.

12. OCTOGOMPHUS SPECULARIS Hagen. A male where Pohono Trail crosses Meadowbrook, June 30. 6000 ft.

13. ANAX JUNIUS Drury. Observed frequently through the west. Six specimens taken in the valley at the foot of El Capitan, Y. N. P., 6000 ft.

14. A. WALSINGHAMI McLachlan. A male swept from the air above a stream near Washington, Utah on August 8. A new record for Utah.

15. AESCHNA CALIFORNICA Calvert. 4 males taken near

Franklin, Idaho on June 15; a female near Great Salt Lake, Utah, June 16.

16. A. MULTICOLOR Hagen. Observed and collected this insect frequently in valleys in Y. N. P. that were not higher than 5000 ft. 2 males near Ensenada, Baja California, August 12; a female near Laguna, N. Mexico, August 18.

17. A. WALKERI Kennedy. 4 males taken June 28 in Y. N. P. at 4000, 5000 and 6000 feet.

18. A. PALMATA Hagen. 3 males, along road twenty miles south of Bryce Canyon, Utah, on August 14.

19. A. INTERRUPTA NEVADENSIS Walker. A male, Dog Lake, Y. N. P., 9000 ft., July 22; a male found on snowbank on Shepherd Crest, Y. N. P., 11,000 ft., August 1.

20. A. VERTICALIS Hagen. A male, Dog Lake, Y. N. P., 9000 ft., July 22; a male, on White Mountain, Y. N. P., 11,000 ft., July 23.

CORDULEGASTER DORSALIS Hagen. 5 males, along Acherson Creek, Y. N. P. (5000) on June 28; 5 males on Indian Creek, Y. N. P., 6000 ft., July 17. The insects flew close to the water and explored every indentation of the shoreline. They were flying with A. *walkeri* Kennedy whose presence they constantly disputed.

22. SOMATOCHLORA SEMICIRCULARIS Selys. Numerous in the high mountain bogs and meadows of Y. N. P. at altitudes of 8-11,000 feet.

23. CORDULIA SHURTLEFFI Scudder. Common in Y. N. P. and frequently found flying with S. *semicircularis* Selys, although often at lower altitudes.

24. PERITHEMIS DOMITIA Drury. Common about a small artificial lake near Clinton, Oklahoma, August 19.

25. LIBELLULA LUCTUOSA Burmeister. Numerous about Clinton, Oklahoma, August 19, where it was flying with *Perithemis*.

26. L. SATURATA Uhler. Observed and captured frequently west and south of Utah, though never above 7000 feet.

27. L. PULCHELLA Drury. Common through west, below 7000 feet.

28. L. QUADRIMACULATA Linne. Frequently observed and collected west and south of the Black Hills, South Dakota. In Y. N. P. often taken up to 10,000 feet.

29. L. NODISTICTA Hagen. Common about the western end of Mono Lake, California, on August 1 and 4, 6000 ft., 2 males and 1 female, Wowona Meadows, Y. N. P., 4000 ft., July 17.

30. L. COMPOSITUS Hagen. 3 males and 5 females, south of Great Salt Lake, Utah, about roadside ditches. One male has well-developed nodal spots.

31. PLATHEMIS LYDIA Drury. Observed at lower altitudes across the country. Few were the reed-edged pools unaccompanied by these "white-tails".

32. P. SUBORNATA Hagen. 3 males and 4 females, on the Great Salt Lake Desert, Utah, June 16.

33. SYMPETRUM CORRUPTUM Hagen. Apparently the most widely distributed Anisopteron in the West. It seemed to flourish in any habitat and at any altitude. It was collected along the ocean in Baja California, along the Colorado River in the Grand Canyon, in the midst of the Great Salt Desert of Utah, among the forests of Idaho, and a lifeless specimen was found on the snow of the Conness Glacier in Y. N. P. at an altitude of 12,000 feet. It was taken over standing water and along swift glacier-fed stream, over deserts and around mountain tops. It was first on wing in the morning and the first on wing after a rain.

34. S. ILLOTUM Hagen. A male, Yosemite Valley, 4000 ft., June 28.

35. S. PALLIPES Hagen. 4 males and 1 female, Yosemite Valley, July 1, 13, and August 4.

36. S. DECISUM Hagen. 5 pair, Wells, Nevada, June 16, where they were emerging in countless numbers. Common in swampy meadows in Yosemite Valley late in June.

37. S. SEMICINCTUM Say. A male, Mather, California June 28, and a female in Yosemite Valley, August 4.

38. S. COSTIFERUM Hagen, 3 males and a female taken in a swampy region of the west shore of Mono Lake, California, 6000 ft., August 1, 4.

39. S. DANAE Sulzer. A series of these insects was taken with S. *costiferum* Hagen on the west shore of Mono Lake, California on August 1 and 4.

40. LEUCORRHINIA HUDSONICA Selys. 2 males and 4 females, Y. N. P. during late June and early August.

41. L. INTACTA Hagen. 2 males, Franklin, Idaho, June 15; 4 males, Mather, California, June 28.

42. L. GLACIALIS Hagen. A series of these insects taken on July 11 and 28 in Y. N. P.

43. PACHYDIPLAX LONGIPENNIS Burmesiter. A male, near Ensenada, Baja, California on August 12.

44. MESOTHEMIS SIMPLICICOLLIS Say. 2 females taken south of the Great Salt Lake, Utah on June 16; a female at Glendale, Arizona, August 13.

45. BRECHMORHOGA MENDAX Hagen. 2 males taken along a rocky stream near Washington, Utah on August 14. A new record for Utah.

46. PALTOTHEMIS LINEATIPES Karsch. A male captured along Bright Angel Creek in the Grand Canyon on August 16.

47. PANTALA HYMENEA Say. Observed and collected frequently through the West, often at high altitudes. Secured a specimen at 11,000 feet on the snow of Conness Glacier, July 23.

48. P. FLAVESCENS Fabricius. 2 males, Lebonon, Missouri, August 21.

49. TRAMEA LACERATA Hagen. 1 male, Lebonon, Missouri, August 21.

50. T. ONUSTA Hagen. 3 males, near Ensenada, Baja California on August 12.

ZYGOPTERA.

51. HETAERINA AMERICANA Fabricius. Collected in Mojave Desert, California; Grand Canyon, Arizona; Albuquerque, N. Mex.; and Bryce Canyon, Utah on August 13, 16, 18, and 20.

52. LESTES CONGENER Hagen. Taken in Yosemite Valley, Mono Lake, Laguna, N. Mex., and Bryce Canyon, Utah on July 2, August 1, 18.

53. LESTES FORCIPATUS Rambur. A series secured in Yosemite Valley during July.

54. L. DISJUNCTUS Selys. 2 females at Bryce Canyon, Utah, August 14; common in Kaibab Forest, Arizona, August 15; 1 female at Clinton, Oklahoma, August 19.

55. L. UNCATUS Firby. Common through west. Series secured in Yosemite during July; at Franklin, Idaho, June 15; and at Wells, Nevada, June 16.

56. HYPONEURA LUGENS Hagen. 3 females taken along a stream near Washington, Utah. A new record for Utah.

57. ARGIA AGRIOIDES Calvert. 1 female taken in the Mojave Desert, California, on August 13; 1 male at Washington, Utah, August 14; 2 males near Laguna, N. Mex., August 18.

58. A. APICALIS Say. A pair, Prophetstown, Illinois, June 9; a pair at Weatherford, Oklahoma, August 20.

59. A. MOESTA Hagen. 2 males, Prophetstown, Illinois, June 9; 1 female, Grand Canyon, August 16; 5 males and 1 female, Clarence, Oklahoma, August 20.

60. A. SEDULA Hagen. 1 female, Clarence, Oklahoma, August 20; 5 males Lebonon, Missouri, August 21.

61. A. VIVIDA Hagen. Common in Yosemite up to 6000 feet during July; 2 males near Great Salt Lake, Utah, June 16; 5 males and 4 females, Grand Canyon, Arizona, August 16.

62. AMPHIAGRION ABBREVIATUM Selys. 2 males and 1 female at Wells, Nevada, June 16; a series at Yosemite during July; 3 males at Bryce Canyon, Utah, August 14.

63. TELEBASIS SALVA Hagen. Very common near Ensenada Baja California, August 12.

64. ENALLAGMA BOREALE Selys. Series at Franklin, Idaho, June 15; 4 males and 1 female, Bryce Canyon Utah, August 14.

65. E. CLAUSUM Morse. Common along roadside through Great Salt Desert, Utah, June 16.

66. E. CYATHIGERUM Charpentier. Series in Y. N. P. during July; a male near Laguna, N. Mex., August 18.

67. E. EXSULANS Hagen. 2 pairs taken near Prophetstown, Illinois on June 9.

68. E. CARUNCULATUM Morse. Specimens taken frequently through western United States and Baja California.

69. E. CIVILE Hagen. Common through west.

70. E. PRAEPARVUM Hagen. 4 males at Albuquerque, N. Mex., August 18; 4 males at Laguna, N. Mex., August 18.

71. E. ANNA Williamson. Series taken just south of Great Salt Lake, Utah, June 16; 1 male at Bryce Canyon, Utah, August 14.

72. ISCHNURA DENTICOLLIS Burmeister. Very common through western United States and Baja California.

73. I. DEMORSA Hagen. 1 male and 2 females at Bryce Canyon, Utah, August 14; 1 male and 2 females at Laguna, N. Mex., August 18. A new record for Utah.

74. I. PERPARVA Selys. Common through west.

75. I. CERVULA Selys. Common through western United States and Baja California.

76. I. DAMULA Calvert. 1 female, Bryce Canyon, Utah, August 14; 6 females, Laguna, N. Mex., August 18. A new record for Utah.

Two New Species of Helmidae from a Warm Spring in Montana. (Coleoptera).

By MELVILLE H. HATCH, University of Washington, Seattle, Washington.

Recently, Dr. C. J. D. Brown of the Department of Zoology, Montana State College sent me a vial containing two new species of helmid beetles which are described below. The beetles were collected by Dr. Brown on December 6, 1936 in a spring with a temperature of about 22° C. throughout the year, located at the mouth of Bridger Canyon, near Bozeman, Gallatin County, MONTANA.

Heterelmis browni n. sp. (figure 1)

Length 2 mm.; piceous, the antennae, elytra, tibiae and tarsi paler; pronotum quadrate, about five-sixths as broad as long, sides bisinuate, anterior angles prominent and acute, posterior

angles slightly acute; disc of pronotum uniformly alutaceous, set with fine hairs, with an elevated, slightly sinuate carina extending from base to apex on either side at a distance from either lateral margin of about one-fifth the total width of the pronotum; the surface of the pronotum undulating with an especially prominent longitudinally oval impression on the middle line just in front of the middle and other less prominent impressions at about the anterior third along the lateral margins and at about basal third just within the lateral carinae and elsewhere; elytra uniformly smooth, shining, set with fine hairs and with about ten longitudinal series of punctures the outer two of which are invisible in dorsal view, the second interval carinate in basal fourth, the fifth interval carinate in about basal three fifths, the seventh interval strongly carinate nearly to apex.

Type and fourteen paratypes in collection of author.

Distinguished from the other nearctic species of *Heterelmis* by the sculpture of the pronotum, which is neither smooth as in *nitidula* LeC. and *latiuscula* LeC. or marked by a transverse impression between the lateral carinae as in *glabra* Horn and *vulnerata* LeC. Morever, the pronotum is said to be broader than long in *glabra* and scarcely longer than broad in *vulnerata*.

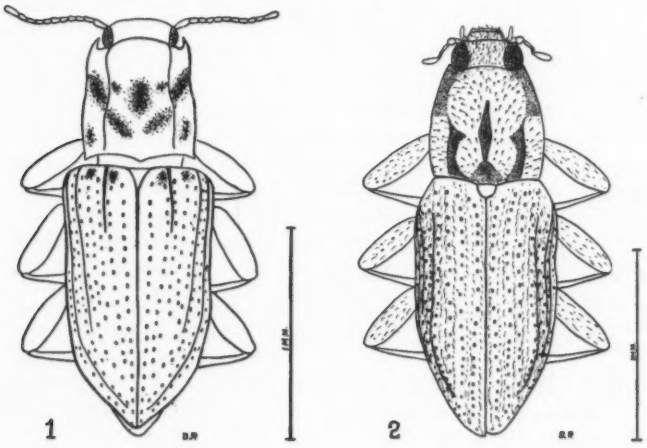

Fig. 1. *Heterelmis browni* n. sp. Fig. 2. *Macronychus thermae* n. sp.

Macronychus thermae n. sp. (figure 2)

Length 2 mm.; piceous, the antennae, legs, elytra, and apical portions of the abdomen paler; antennae short, eight-segmented, the funicle composed of a basal long and four very short segments, the last segment of the antenna forming a well marked club; pronotum widest at about basal fourth where it is nearly as wide as long, apex about seven eighths as wide as the base, the sides somewhat arcuate; anterior angles of pronotum slightly prominent and acute, the posterior angles nearly rectangular; pronotal disc smooth, shining, sparsely coarsely punctate and pubescent, with an opaque longitudinal median impression occupying about or somewhat more than its median half, the region of the anterior angles opaque; the lateral carinae of the pronotum distinct, sinuate, occupying basal three fifths of pronotum, bordering an opaque impressed area on their median side; the median basal portion of the pronotum impressed, this impression more or less confluent with the median and lateral opaque impressions; elytra with about nine longitudinal series of punctures, coarse at base, finer behind the middle, nearly obsolete towards apex; elytral intervals each set with a series of semierect setae, the fourth, sixth, and seventh intervals carinate, carinae crenulate on top, the fourth interval carinate from about basal sixth to beyond apical fourth, the sixth interval carinate to beyond middle, the seventh interval carinate to beyond apical fourth, the carinae of the sixth and seventh intervals confluent for about basal seventh; the surface of the elytra latarad to the fourth interval sericeous except for a smooth humeral space; apex of elytra serrulate.

Type and fourteen paratypes in collection of author.

This species may be distinguished from the other described nearctic species of *Macronychus* by means of the following table.

KEY TO NEARCTIC SPECIES OF *Macronychus* Müll.

A. Elytra with fourth, sixth, and seventh intervals carinate, the sixth more briefly so, the carinae crenulate on top; pronotum with a median longitudinal impression.

B. Lateral carinae of pronotum nearly entire; elytra without lateral sericeous space; length 2.5 mm.; Calif..... *parvulus* Horn*

BB. Lateral carinae of pronotum confined to basal three fifths; elytra sericeous laterad to the fourth interval; antennae eight-segmented; length 2 mm.; Mont..... *thermae* n. sp

*Taken from description by Horn, Trans. Am. Ent. Soc. III, 1870, p. 41.

AA. Elytra with the seventh interval alone carinate, and it very prominently so, the carina crenulate on top; elytra strongly sericeous laterad to the seventh interval; pronotum without median impression, the lateral carinae vague and confined to the basal half; antennae seven-segmented; length 3-3.5 mm.; Quebec (*Chagnon*), Connecticut (*Britton*), and District of Columbia (*Ulke*) to Michigan (*Hatch*) and Iowa (*Wickham*).. .....*glabratus* Say

The figures were drawn by Miss Dorotha Pemberton, a student at the University of Washington employed by the National Youth Administration with funds appropriated by the United States Government.

Four New Coleoptera (Elateridae and Buprestidae).

By Josef N. Knull,

The Ohio State University, Columbus, Ohio.

Conoderus browni n. sp.

♂—Form robust, rufocastaneous on both surfaces with a somewhat indistinct irregular dark transverse area at base and another on apical third of elytra, apical one extending along suture.

Head convex; front broadly rounded; surface densely punctured; punctures separated by less than their own diameters; antennae extending one joint beyond hind angles of pronotum, scape stout, second joint slightly longer than wide, third joint longer than second, fourth joint longer than second and third taken together, fifth joint shorter than fourth, joints five to eleven of about equal length, joints four to ten slightly serrate.

Pronotum longer than wide, wider at base than in front, widest back of middle, hind angles produced, acute; disk convex, prehumeral carinae single, sinuate, divergent from lateral margin; surface densely punctured with one type of puncture which becomes smaller at base and sides. Scutellum round, finely punctured.

Elytra a little over two times as long as wide, gradually narrowing posteriorly to rounded apices; disk with strongly impressed striae, punctures small and confluent, interspaces convex, very finely puctured.

Beneath finely densely punctured. Fourth tarsal segment broadly lamellate beneath.

Length 7.6 mm.; width 2.1 mm.

Described from a series of specimens collected at Brownsville, Texas, from May 10 to June 6, 1935 by the author.

Holotype male, May 22, and *paratypes* in writer's collection, *paratypes* in Canadian National Collection, U. S. National Museum and Ohio State University Collection.

According to Van Dyke's key[1] this species would run to *C. varians* Seinh., but can be distinguished by the coarser punctures of the pronotum and the smaller size.

Variation. The indistinct dark color pattern unites the two dark areas of the elytra by extending the entire length of the suture in some specimens. Other specimens show signs of a similar median area on pronotum.

I take pleasure in naming this species after Mr. W. J. Brown who has done extensive work with the Elateridae.

Limonius flavomarginatus n. sp.

♂. Resembling a small specimen of *L. griseus* Beauv. in size, form, color and general appearance. Above dark brown, head, pronotum and elytra with exception of sutures margined with dark yellow, beneath in most part dark brown margined with dark yellow, legs same color as the margins; clothed with moderately long fulvous pubescence.

Head with front slightly concave near front margin; front margin broadly rounded, no indication of an emargination; surface densely punctured, punctures separated by less than their own diameters; eyes small, finely granulate; antennae reaching to just beyond hind angles of pronotum when laid along side margin, second and third joints short, of equal length, joints four to ten longer, serrate, eleventh joint elongate.

Pronotum slightly longer than wide, narrower in front than at base, widest back of middle; sides broadly rounded anteriorly, sinuate near base; disk convex, slightly depressed in front of scutellum, prehumeral carinae single, distinct; surface densely punctate, punctures separated by a distance less than their own diameters. Scutellum round, granulate.

Elytra less than three times as long as wide, gradually narrowed posteriorly to rounded apices; disk with striae impressed, punctures large, separated by about their own diameter, interspaces finely punctured, not rugose.

Beneath finely densely punctured; propleurae with punctures contiguous; prosternal sutures distinctly sulcate in front.

Length 9.7 mm.; width 2.5 mm.

[1] E. C. Van Dyke, Proc. Cal. Acad. Sci., Vol. 20, No. 9, pp. 291-465, 1932.

♀. Differs from the male by antennae not reaching hind angles of pronotum; length 11.1 mm.

Holotype male and *allotype* collected at Rock Bridge, OHIO, June 14, 1936, by the writer, in the collection of the author.

According to Van Dyke's key[1] this species would run to *L. plebejus* Say. It can be distinguished by the fine punctures of the head and pronotum.

Paratyndaris tucsoni n. sp.

♂. Form robust, cylindrical, piceous with violaceous lustre, a small triangular red spot on lateral margin of each elytron, just in front of middle and another like area opposite it near suture, clothed above and below with recumbent white pubescence.

Head convex, no sign of median depression, eyes small, finely granulate; surface finely punctured, densely pubescent; antennae short, not reaching middle of pronotum when laid along side margin, serrate from the seventh joint.

Pronotum slightly broader than long, widest in middle, wider at base than at apex; sides broadly rounded; lateral margin entire; anterior margin broadly rounded; basal margin slightly sinuate; disk convex, void of median depression; surface densely coarsely punctured at sides, transversely asperate in middle, pubescence concealing punctures at sides, pubescence of central area so short that it appears denuded. Scutellum round, glabrous.

Elytra wider than widest part of pronotum; sides constricted back of humeral angles, subparallel back of middle, then rounded to apices; apices with three teeth along margin and three above; lateral margins serrate from middle; disk convex, umbone prominent; surface irregularly striate, punctures of striae much larger than those of interspaces.

Abdomen beneath finely punctured, the vestiture concealing most of the sculpture, second segment at middle of posterior margin with a small rounded plate extending over the third segment, nearly one half of its width; plate granulate, last abdominal segment terminating in an acute spine. Tarsi slender, claws simple, not toothed, but slightly swollen at bases.

Length 6 mm.; width 2.2 mm.

♀. Differs from the male by the ventral abdominal plate being much smaller.

Described from one pair collected at Tucson, ARIZONA, August 13, 1936, by the author. *Holotype* and *allotype* in writer's collection.

According to the key[2] this species comes next to *P. anomalis* Knull. It can be separated from this species by the arrangement of the red markings of the elytra, which are not united. Superficially it resembles *P. acaciae* Knull, but it can be separated by the serrate seventh antennal joint, lack of a median depression on pronotum and having two red dots on each elytron.

Paratyndaris quadrinotata n. sp.

♂. Form robust, cylindrical, piceous above and below, an irregular red area along side margin of each elytron in front of middle, another like round area opposite this near suture, clothed above and below with recumbent white pubescence.

Head convex, no sign of median depression, eyes small, finely granulate; surface coarsely punctured, densely pubescent; antennae short, not extending to middle of pronotum when laid along side margin, serrate from the sixth joint.

Pronotum wider than long, widest in front of middle, wider at base than at apex; sides constricted in front, then broadly rounded to base; lateral margin entire; anterior margin broadly rounded; basal margin slightly sinuate; disk convex, void of median depression, surface densely coarsely asperate. Scutellum round, glabrous.

Elytra slightly narrower than pronotum; sides constricted back of humeral angles, subparallel to back of middle, broadly rounded to apices; apices with three teeth along margin and three above; lateral margins serrate from middle; disk convex, umbone prominent; surface irregularly strigate, punctures of striae much larger than those of interspaces.

Abdomen beneath finely punctured, vestiture concealing most of the sculpture, second segment at middle of posterior margin with a small rounded plate extending over the third segment one-third of its width, plate granulate, last abdominal segment terminating in an obtuse spine. Tarsi slender, claws simple, not toothed, but slightly swollen at bases.

Length: 5.9 mm.; width 2.2 mm.

♀ differs from the male by the ventral abdominal plate being slightly swollen.

Described from a small series collected at Tucson, ARIZONA, from July 27 to August 15, 1936, by the writer. *Type* labeled August 15, *allotype* and *paratypes* in author's collection.

According to the key[2] this species would come next to *P. coursetiae* Fishr. The extra spot on the elytron will serve to distinguish it.

[2] J. N. Knull, Ann. Ent. Soc. Am., Vol. 30, No. 2, pp. 252-257, 1937.

New List of Titles of Publications Referred to by Numbers in Entomological Literature in Entomological News.

1. Transactions of The American Entomological Society. Philadelphia.
2. Entomologische Blätter, red. v. H. Eckstein etc. Berlin.
3. Annales Sci. Naturelles, Zoologie, Paris.
4. Canadian Entomologist. London, Canada.
5. Pysche, A Journal of Entomology. Boston, Mass.
6. Journal of the New York Entomological Society. New York.
7. Annals of the Entomological Society of America. Columbus, Ohio.
8. Entomologists' Monthly Magazine. London.
9. The Entomologist. London.
10. Proceedings of the Ent. Soc. of Washington. Washington, D. C.
11. Deutsche entomologische Zeitschrift. Berlin.
12. Journal of Economic Entomology, Geneva, N. Y.
13. Journal of Entomology and Zoology. Claremont, Cal.
14. Archivos do Instituto Biologico, Sao Paulo.
15. Annales Academia Brasileira de Sciencias. Rio de Janeiro.
17. Entomologische Rundschau. Stuttgart, Germany.
18. Entomologische Zeitschrift. Frankfurt-M.
19. Bulletin of the Brooklyn Entomological Society. Brooklyn, N. Y.
20. Societas entomologica. Stuttgart, Germany.
21. The Entomologists' Record and Journal of Variation. London.
22. Bulletin of Entomological Research. London.
23. Bollettino del Lab. di Zool. gen. e agraria della Portici. Italy.
24. Annales de la société entomologique de France. Paris.
25. Bulletin de la société entomologique de France. Paris.
27. Bolletino della Societa Entomologica Italiana. Genova.
28. Ent. Tidskrift utgifen af Ent. Föreningen i Stockholm. Sweden.
29. Annual Report of the Ent. Society of Ontario. Toronto, Canada.
30. Archivos do Instituto de Biologia Vegetal, R. d. Janeiro.
31. Nature. London.
32. Boletim do Museu Nacional do Rio de Janiero. Brazil.
33. Bull. et Annales de la Société entomologique de Belgique. Bruxelles.
34. Zoologischer Anzeiger, hrsg. v. E. Korschelt. Leipzig.
35. The Annals of Applied Biology. Cambridge, England.
36. Trans. Royal Entomological Society, London. England.
37. Proceedings of the Hawaiian Entomological Society. Honolulu.
38. Bull. of the Southern California Academy of Sciences. Los Angeles.
39. The Florida Entomologist. Gainesville, Fla.
40. American Museum Novitates. New York.
41. Mitteilungen der schweiz. ent. Gesellschaft. Schaffhausen, Switzerland.
42. The Journal of Experimental Zoology. Philadelphia.
43. Ohio Journal of Sciences. Columbus, Ohio.
44. Revista chileña de historia natural. Valparaiso, Chile.
45. Zeitschrift für wissenschaftliche Insektenbiologie. Berlin.
46. Zeitschrift für Morphologie und Ökologie der Tiere. Berlin.
47. Journal of Agricultural Research. Washington, D. C.
49. Entomologische Mitteilungen. Berlin.
50. Proceedings of the U. S. National Museum. Washington, D. C.
51. Notulae entomologicae, ed. Soc. ent. Helsingfors. Helsingfors, Finland.
52. Archiv für Naturgeschichte, hrsg. v. E. Strand. Berlin.
53. Quarterly Journal of Microscopical Science. London.
54. Annales de Parasitologie Humaine et Compareé. Paris.
55. Pan-Pacific Entomologist. San Francisco, Cal.

56. "Konowia". Zeit. für systematische Insektenkunde. Wien, Austria.
57. La Feuille des Naturalistes. Paris.
58. Entomologische Berichten. Nederlandsche ent. Ver. Amsterdam.
59. Encyclopédie entomologique, ed. P. Lechevalier. Paris.
60. Stettiner entomologische Zeitung. Stettin, Germany.
61. Proceedings of the California Academy of Sciences. San Francisco.
62. Bulletin of the American Museum of Natural History. New York.
63. Deutsche entomologische Zeitschrift "Iris". Dresden.
64. Zeitschrift des österr. entomologen-Vereines. Wien.
65. Zeitschrift für angewandte Entomologie, hrsg. K. Escherich. Berlin.
66. Report of the Proceedings of the Entomological Meeting. Pusa, India.
67. University of California Publications, Entomology. Berkeley, Cal.
68. Science. New York.
69. Physis. Revista Soc. Argentina Cien. Nat. Buenos Aires.
70. Entomologica Americana, Brooklyn Entomological Society. Brooklyn.
71. Novitates Zoologicae. Tring, England.
72. Revue russe d'Entomologie. Leningrad, USSR.
73. Mem. Instituto Butantan. Sao Paulo, Brazil.
74. Sbornik entomolog. národniho musea v Praze. Prague, Czechoslovakia.
75. Annals and Magazine of Natural History. London.
77. Comptes rendus heb. des séances et mémo. de la soc. de biologie. Paris.
78. Bulletin Biologique de la France et de la Belgique. Paris.
79. Koleopterologische Rundschau. Wien.
80. Lepidopterologische Rundschau, hrsg. Adolf Hoffmann. Wien.
82. Bulletin, Division of the Natural History Survey. Urbana, Illinois.
83. Arkiv för zoologie, K. Svenska Vetenskapsakademien i. Stockholm.
84. Ecology. Brooklyn.
85. Genetics. Princeton, New Jersey.
87. Archiv für Entwicklungs mechanik der Organ., hrsg. v. Roux. Leipzig.
88. Die Naturwissenschaften, hrsg. A. Berliner. Berlin.
89. Zoologische Jahrbücher, hrsg. v. Spengel. Jena, Germany.
90. The American Naturalist. Garrison-on-Hudson, New York.
91. Journal of the Washington Academy of Sciences. Washington, D. C.
92. Biological Bulletin. Wood's Hole, Massachusetts.
93. Proceedings of the Zoological Society of London. England.
94. Zeitschrift für wissenschaftliche Zoologie. Leipzig.
95. Proceedings of the Biological Soc. of Washington, Washington, D. C.
97. Biologisches Zentralblatt. Leipzig.
98. Le Naturaliste Canadien. Cap Rouge, Chicoutimi, Quebec.
99. Mélanges exotico-entomologiques, Par Maurice Pic. Moulins, France.
100. Bulletin Intern., Acad. Polonaise Sci. et Lett. Cracovie.
101. Tijdschrift voor entomologie. Nederland. Ent. Ver., Amsterdam.
102. Entomologiske Meddelelser, Entomologisk Forening, Copenhagen.
103. Journal of the Kansas Entomological Society, Lawrence, Kansas.
104. Revista de la Sociedad entomologica Argentina, Buenos Aires.
105. Revista Entomologia, Sao Paulo, Brazil.
106. Anales Sociedad Cientifica Argentina, Buenos Aires.
107. Proc., Royal Entomological Society, London.
108. Revista, Col. Nac. Vicente Rocafuerte, Guayaquil.
109. Arbeiten uber morpholog. und taxonom. ent. aus Berlin-Dahlem.
110. Arbeiten ueber physiolog. u. angewandte ent. aus Berlin-Dahlem.
111. Memorias do Instituto Oswaldo Cruz. Rio de Janeiro.
112. Anales del Instituto de Biologia Mexico.
113. Entomologische Beihefte aus Berlin Dahlem.
114. Occasional Papers of the Museum of Zoology, University of Michigan.
115. Memorias de la Soc. Cubana de Hist. Nat. Havana, Cuba.
116. Parasitology. Ed. Keilin and Hindle. London.

Current Entomological Literature

COMPILED BY V. S. L. PATE, LAURA S. MACKEY and E. T. CRESSON, Ja.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded.

This list gives references of the current or last year unless otherwise noted. All continued papers, with few exceptions, are recorded only at their first installment.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

Note. References to papers containing new forms or names not so stated in titles are followed by (*); if containing keys are followed by (k); papers pertaining exclusively to neotropical species, and not so indicated in the title, have the symbol (S) at the end of the title of the paper.

The figures within brackets [ ] refer to the journal in which the paper appeared, as numbered in the list of Periodicals and Serials published in our January and June issues. This list may be secured from the publisher of **Entomological News** for 10c. The number of, or annual **volume**, and in some cases the part, heft, &c., the later **within** ( ) follows; then the pagination follows the **colon** :

Papers published in the Entomological News are not listed.

GENERAL.—Bodenheimer, F. S.—Population problems of social insects. [Biol. Revs., Cambridge] 12:393-430, ill. **Borgmeier, T.**—Insectos atacando chocolate no Rio de Janeiro. [107] 7:530. **Claassen, P. W.**—Obituary by E. F. Phillips. [12] 30: 807-808, ill. **Gazulla, P.**—Colectores de insectos. [44] 40: 13-19. **Metcalf, Z. P.**—Methods of preserving and studying genitalia. [12] 30: 805. **Porter, C. E.**—Galeria de Naturalistas de Chile. XLV.—El R. P. Felix Jaffuel. [44] 40: 154-159, ill. Galeria de Naturalistas de Chile. XLVI.—El Prof. Carlos Silva F. [44] 40: 203-206, ill. Notas breves de entomologia agricola. [44] 40: 426-429, ill. **Smith & Kelley.**—The sixth annual insect population summary of Kansas covering the year 1936. [103] 10: 113-132, ill. **Weiss, H. B.**—The Vermin Killer: 1775 model. [6] 45: 403-407. **Wheeler, G.**—An entomological dictatorship. [21] 49: 123-124. **Zalessky, G.**—Ancestors of some groups of the present day insects. [31] 140: 847-848, ill.

ANATOMY, PHYSIOLOGY, ETC.—Bhalia & Keilin.—On a new case of parasitism of a snail (Vertigo ugenessi) by a Dipterous larvae. [116] 29: 399-407, ill. **Borquin, F.**—Metamorfosis de Stenoptilia insperata (Lep. Pterophoridae). [107] 7: 426-428, ill. (S). **Campbell, R. E.**—Temperature & moisture preferences of wireworms. [84] 18: 479-489, ill. **Claus, A.**—Einige physiologique über Sigara lugubris (Hemiptera). [34] 120; no. 3/4: 40-44. **Cousin.**

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The writer believes that butterfly visitors should be placed on our check lists provided the fact that they are only known as visitors is clearly indicated.

This specimen is in the collection of H. Glazbrook of Sarita, Texas.

WILLIAM D. FIELD, Colorado Springs, Colorado.

The one hundred and fiftieth anniversary of the birth of THOMAS SAY was observed by the Academy of Natural Sciences of Philadelphia on July 27, 1937, when S. Davis Wilson, mayor of Philadelphia, made the commemorative address. *Science,* July 30, 1937, p. 97.

ENTOMOLOGICAL NEWS for December, 1937, was mailed at the Philadelphia Post Office, December 29, 1937.

* Contribution from the Penrose Museum of Rhopalocera, Colorado Springs, Colorado.

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